

## Specification

The paragraph beginning on page 1, line 13 is amended as follows:

A typical prior art head and disk system 10 is illustrated in figure 1. In operation the magnetic transducer 20 is supported by the suspension 13 as it flies above the disk 16. The magnetic transducer 20, usually called a "head" or "slider," is composed of elements that perform the task of writing magnetic transitions (the write head 23) and reading the magnetic transitions (the read head 12). The electrical signals to and from the read and write heads 12, 23 travel along conductive paths (leads) 44 which are attached to or embedded in the suspension 13. Typically there are two electrical contact pads (not shown) each for the read and write heads 12, 23. Wires or leads 14A, 14B, 15A, 15B are connected to these pads and routed in the arm 13 to the arm electronics (not shown). The magnetic transducer 20 is positioned over points at varying radial distances from the center of the disk 16 to read and write circular tracks (not shown). The disk 16 is attached to a spindle 18 that is driven by a spindle motor 24 to rotate the disk 16. The disk 16 comprises a substrate 26 on which a plurality of thin films 21 are deposited. The thin films 21 include ferromagnetic materials in which the write head 23 records the magnetic transitions in which information is encoded.

The paragraph beginning on page 4 , line 30 is amended as follows:

Figure 5 is the same midline section of Figure 4, but in this drawing the disk 16 and carrier 41 are illustrated in the sputtering chamber 50 which contains plasma 55 43 which contains the sputtering gas ions and the target sputtered elements. In the case where a CoCrPt magnetic film is being deposited using argon as the working gas, the plasma would contain positive ions and neutrals of the sputtering gas as well as neutral and charged Co, Pt and Cr species. The electric field generated around the disk 16 is illustrated by the arrows which are arranged perpendicular the disk's planar surface. Only one side of the disk 16 is decorated with the arrows in order to simplify the illustration and provide room for the element numbers and labels, but the field on the undecorated side is symmetric with what is shown. The size of the arrow indicates the strength of the electric field relative to a selected baseline. In absolute terms the variation in the electric field is small, but nevertheless significant. The electric field is shown as being strongest at the circumference of the disk 16 and monotonically declining to the lowest value at the inner diameter.

The paragraph beginning on page 5 , line 6 is amended as follows:

One effect of the electric field is accelerate the positive ions in the plasma 55 43 toward the disk 16. In the absence of the electric field bias, positive ions are only accelerated towards the target material. Application of negative bias to the substrate results in positive ion bombardment of the growing thin film surface. The predominant impinging species on the growing thin film surface are positively charged Ar ions. This results in re-sputtering effects and since the field is stronger at the outer diameter, the acceleration will be correspondingly greater at the outer diameter. Re-sputtering effects during film growth have been discussed by D. W. Hoffman, "Intrinsic Re-sputtering — Theory and Experiment", (J. Vac. Sci. Tech. A(8), 3707, (1990)). The intrinsic re-sputtering efficiency was found to strongly depend on the mass ratios of the target material ( $M_t$ ) and the sputtering gas ( $M_g$ ) and shows mostly a linear dependence on the following dimensionless parameter:  $(M_t - M_g) / (M_t + M_g)$ . Experimentally it is found that Ar ions (mass= 40 amu) re-sputter Pt (195 amu) more effectively than Co (59amu) or Cr (52 amu). The re-sputtering efficiency is also found by Hoffman to depend on the energy of the sputtering ion. This is provided by the substrate bias and as discussed it is largest at the outer diameter (OD) in the embodiment being described. Therefore, it is expected that platinum will be re-sputtered more effectively by the ionized sputtering Ar+ gas where the electric field is greater. This differential re-sputtering will lead to a reduced platinum content where the electric field is greatest. Since the electric field in the carrier example above, declines along the radius of the disk 16, the platinum content is predicted to increase along radial lines from the outer diameter (circumference) and the inner diameter.